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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Continuation of Disposition of Claims: Claims pending in the application are 1 - 2, 4 - 7, 10 - 12, 16, 19 - 20, 22 - 24, 30, 40 - 42, and 44.

DETAILED ACTION

1. This action is response to the amendment filed on 8/2/2010 in which claims 1 – 2, 4 – 7, 10 – 12, 16, 19 – 20, 22 – 24, 30, 40 – 42, and 44 are presented for further examination.

Response to Arguments

2. Applicant's arguments with respect to claims 1 – 2, 4 – 7, 10 – 12, 16, 19 – 20, 22 – 24, 30, 40 – 42, and 44 have been considered but are moot in view of the new ground(s) of rejection.

Remarks

3.1 As per amended claim 1, applicant argues in substance in pages 11 – 12 that the combine teaching of Banning (US 5,471,613) and Li (US 5,911,138) does not disclose wherein (a) an arboreal graphical representation is an entity that shows a calculation expression in the form of a tree, and (b) at least one fragment of said calculation expression is shown in two different nodes of said tree.

In response to applicant's argument, Examiner respectfully responds that Jenks (US 6,610,106) specifically disclose wherein (a) an arboreal graphical representation is an entity that shows a calculation expression in the form of a tree (col.3 lines 17 – 21; *Jenks teaches representing mathematical by expression tree*), and (b) at least one fragment of said calculation expression is shown in two different nodes of said tree

(fig.3, fig.7E, and col.4 lines 22 – 35; *Jenks teaches representing a fragment of calculation on each node of the tree*).

3.2 As per claim 6, applicant argues in substance in page 13 that Li (US 5,911,138) does not disclose wherein one of said arboreal graphical representations is an ESCALATOR STRUCTURE.

Examiner respectfully disagrees.

In response to applicant's argument, Examiner respectfully responds that Li (US 5,911,138) specifically disclose wherein one of said arboreal graphical representations is an ESCALATOR STRUCTURE (col.4 line 67 and col.5 lines 1 - 7; *Li teaches user choosing type of graphical representation of query*).

3.3 As per claim 10, applicant argues in substance in page 13 that Li (US 5,911,138) does not disclose means for applying the feature of GROUPING OF PEERS, which is characterized because said system imposes the condition that the operators that link different sister nodes have the same type.

In response to applicant's argument, Examiner respectfully responds that Kearns (US 2004/0104945) does not specifically disclose means for applying the feature of GROUPING OF PEERS, which is characterized because said system imposes the condition that the operators that link different sister nodes have the same type (abstract and para.[0050]; *Kearns teaches grouping of expression into folders*).

3.4 As per claim 11, applicant argues in substance in page 13 that Li (US 5,911,138) does not disclose means for applying the feature of SEQUENCIATION OF NON ASSOCIATIVE OPERATORS, which is characterized by the fact that the system

imposes the obligation that the operators that join sister nodes must satisfy the associative property.

In response to applicant's argument, Examiner respectfully responds that Jenks (US 6,610,106) specifically disclose means for applying the feature of SEQUENCIATION OF NON ASSOCIATIVE OPERATORS, which is characterized by the fact that the system imposes the obligation that the operators that join sister nodes must satisfy the associative property (fig.3 and fig.12; *Jenks teaches representing of mathematical operator by node*).

3.5 As per claim 19, see the rejection of claim 1 above.

3.6 Thus, the rejection is maintained.

Claim Objections

A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

4.1 Claims 1 and 19 are objected to because of the following informalities: The claims reference character, (a), (b), (c), d), (a), (b), (c) is not proper because it contains

duplication of references. Examiner cannot ascertain which part of the claim the reference is referring to. Appropriate correction is required.

4.2 Claims 22 - 24, 30, and 42 depends on claim 19. The claims 22 - 24, 30, and 42 also depends on claims 4 – 6, 12, and 40 respectively. Thus, the dependency of the claims is improper.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 2, 5, 11—12, 19 – 20, 23, 30, 40 – 42, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Jenks (US 6,610,106).

As per claim 1, Jenks discloses,

A system for managing calculation expressions (col.1 lines 7 – 10) *Jenks teaches expression editor for creating and editing mathematical formulas.*

comprising (a) memory means, for storing information about said calculation expressions (col.1 lines 7 – 15) *Jenks teaches performing scientific computation.*

(b) processing means, for modifying the content or form of said calculation Expressions (col.3 lines 41 – 43) *Jenks teaches user modifying mathematical expression.*

(c) means for receiving external input (col.1 lines 11 - 15) *Jenks teaches using keyboard and mouse to perform action.*

and (d) means for showing one or more arboreal graphical representations (fig.7 and col.1 lines 11 - 15) *Jenks teaches displaying mathematical expression.*

wherein (a) an arboreal graphical representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree (fig.7 and col.3 lines 18 - 21) *Jenks teaches mathematical expression are represented by expression tree.*

(b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression (fig.3, fig.7E, and col.4 lines 22 – 35) *Jenks teaches representing a fragment of calculation on each node of the tree.*

and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator (fig.3) *Jenks teaches nodes containing fraction and power.*

wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2 and fig.3) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

As per claim 2, the rejection of claim 1 is incorporated and further Jenks discloses,

further comprising means for editing said one or more arboreal graphical representations (col.3 lines 39 – 41) *Jenks teaches modification of expression tree.*

wherein said editing comprises one or more of the following actions: (1) creating after blank situation, (2) modifying, (3) creating after blank situation and modifying (col.3 lines 39 – 50) *Jenks teaches building of expression from empty expression , insertion of expression, and deletion of expression.*

As per claim 5, the rejection of claim 1 is incorporated and further Jenks discloses,

wherein one of said graphical representations is a VERTICAL STRUCTURE, wherein said vertical structure is characterized by the following: the nodes of the tree expand in vertical fashion, so that if a node is at a given position, its child nodes are located at a lower position, and it comprises means for indicating which nodes are the parents of which nodes (fig.2 and fig.3).

As per claim 11, the rejection of claim 1 is incorporated and further Jenks et al discloses,

further comprising means for applying the feature of SEQUENCIATION OF NON ASSOCIATIVE OPERATORS, which is characterized by the fact that the system imposes the obligation that the operators that join sister nodes must satisfy the

associative property (fig.3 and fig.12)

As per claim 12, the rejection of claim 1 is incorporated and further Jenks et al discloses,

further comprising means for applying the functionality of EXPLICATIVE TEXT, whereby a descriptive text is associated to one or more of the nodes of said graphical representations (fig.3 and fig.8).

Claims 19 – 20, 23, and 30 are method claim corresponding to the system claims 1 - 2, 5, and 12 respectively, and rejected under the same reason in connection to the rejection of claims 1 - 2, 5, and 12 respectively above.

As per claim 40, the rejection of claim 1 is incorporated and further Jenks et al discloses,

further comprising means for applying the functionality of PARTIAL RESULTS, where said functionality is characterized by the following: for one or more nodes, it shows a value that is associated to said node or nodes, wherein said value depends on the evaluation of said expression for said node or nodes (fig.7A – fig.7.E)

As per claim 41, the rejection of claim 1 is incorporated and further Jenks et al discloses,

further comprising means for converting said calculation expression into other type of entities, such as for example formulae for environments such as spreadsheet applications, search strings for database applications or Internet search engines or other types of entities (col.1 lines 35 – 51))

Claim 42 is a method claim corresponding to the system claim 40, and rejected under the same reason set forth in connection to the rejection of claim 40 above.

Claim 44 is a computer readable medium claim corresponding to the method claim 19, and rejected under the same reason set forth in connection to the rejection of claim 19 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 6 - 7, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenks (US 6,610,106), in view of Li et al (US 5,911,138).

As per claim 4, Jenks discloses, managing calculation expressions, comprising (a) memory means, for storing information about said calculation expressions, (b) processing means, for modifying the content or form of said calculation Expressions, (c) means for receiving external input, and (d) means for showing one or more arboreal graphical representations, wherein (a) an arboreal graphical representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree, (b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression, and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator, wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2, fig.3, fig.7E, col.1 lines 1 – 15, col.3 lines 18 – 43, and col.4 lines 22 – 35) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

Jenks does not specifically disclose wherein one of said graphical representations is a TOWER STRUCTURE wherein said tower structure is characterized by the following: the nodes of the tree are arranged in vertical fashion, some nodes being located over other nodes, and said system comprises means to indicate which nodes are the parent of which nodes.

However, Li et al in an analogous art discloses,
wherein one of said graphical representations is a TOWER STRUCTURE wherein
said tower structure is characterized by the following: the nodes of the tree are
arranged in vertical fashion, some nodes being located over other nodes, and
said system comprises means to indicate which nodes are the parent of which
nodes (col.4 lines 59 – 67, col.5 lines 1 – 67, and col.6 lines 1 - 65) *Li teaches user*
choosing type of graphical representation of query.

Hence, it would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of Li into Jenks to include wherein one of said graphical representations is a TOWER STRUCTURE wherein said tower structure is characterized by the following: the nodes of the tree are arranged in vertical fashion, some nodes being located over other nodes, and said system comprises means to indicate which nodes are the parent of which nodes. The modification would be obvious because one of ordinary skill in the art would be motivated to provide an easy and efficient means of identifying cause of particular problem during query execution.

As per claim 6, Jenks discloses, managing calculation expressions, comprising (a) memory means, for storing information about said calculation expressions, (b) processing means, for modifying the content or form of said calculation Expressions, (c) means for receiving external input, and (d) means for showing one or more arboreal graphical representations, wherein (a) an arboreal graphical

representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree, (b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression, and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator, wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2, fig.3, fig.7E, col.1 lines 1 – 15, col.3 lines 18 – 43, and col.4 lines 22 – 35) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

Jenks does not specifically disclose wherein one of said arboreal graphical representations is an ESCALATOR STRUCTURE, wherein said escalator structure is characterized by the following: (a) the nodes of the tree are laid out horizontally in the different levels of a table, and the expression can be transversed by horizontally transversing said table, (b) a child node is laid out in a level which is located below the level of its parent node, so that the expression continues at that level, (c) at the end of a node, said node is exited and the expression continues at the level of the parent node (d) there might exist a summary cell that contains the total expression.

However, Li et al in an analogous art discloses,

wherein one of said arboreal graphical representations is an ESCALATOR STRUCTURE, wherein said escalator structure is characterized by the following:

(a) the nodes of the tree are laid out horizontally in the different levels of a table, and the expression can be transversed by horizontally transversing said table, (b) a child node is laid out in a level which is located below the level of its parent node, so that the expression continues at that level, (c) at the end of a node, said node is exited and the expression continues at the level of the parent node (d) there might exist a summary cell that contains the total expression (col.4 lines 59 – 67, col.5 lines 1 – 67, and col.6 lines 1 - 65) *Li teaches user choosing type of graphical representation of query.*

Hence, it would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of Li into Jenks to include wherein one of said arboreal graphical representations is an ESCALATOR STRUCTURE, wherein said escalator structure is characterized by the following: (a) the nodes of the tree are laid out horizontally in the different levels of a table, and the expression can be transversed by horizontally transversing said table, (b) a child node is laid out in a level which is located below the level of its parent node, so that the expression continues at that level, (c) at the end of a node, said node is exited and the expression continues at the level of the parent node (d) there might exist a summary cell that contains the total expression. The modification would be obvious because one of ordinary skill in the art would be motivated to provide an easy and efficient means of identifying cause of particular problem during query execution.

As per claim 7, Jenks discloses, managing calculation expressions, comprising (a) memory means, for storing information about said calculation expressions, (b) processing means, for modifying the content or form of said calculation Expressions, (c) means for receiving external input, and (d) means for showing one or more arboreal graphical representations, wherein (a) an arboreal graphical representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree, (b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression, and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator, wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2, fig.3, fig.7E, col.1 lines 1 – 15, col.3 lines 18 – 43, and col.4 lines 22 – 35) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

Jenks does not specifically disclose wherein one of said arboreal graphical representations is a HORIZONTAL STRUCTURE, wherein said horizontal structure is characterized by the following: the nodes of the tree expand in horizontal direction, so

that a parent node has a different horizontal position than its child nodes, and said system comprises means for indicating which nodes are the parents of which nodes.

However, Li et al in an analogous art discloses,
wherein one of said arboreal graphical representations is a HORIZONTAL
STRUCTURE, wherein said horizontal structure is characterized by the following:
the nodes of the tree expand in horizontal direction, so that a parent node has a
different horizontal position than its child nodes, and said system comprises
means for indicating which nodes are the parents of which nodes (col.4 lines 59 –
67, col.5 lines 1 – 67, and col.6 lines 1 - 65) *Li teaches user choosing type of graphical*
representation of query.

Hence, it would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of Li into Jenks to include wherein one of said arboreal graphical representations is a HORIZONTAL STRUCTURE, wherein said horizontal structure is characterized by the following: the nodes of the tree expand in horizontal direction, so that a parent node has a different horizontal position than its child nodes, and said system comprises means for indicating which nodes are the parents of which nodes. The modification would be obvious because one of ordinary skill in the art would be motivated to provide an easy and efficient means of identifying cause of particular problem during query execution.

Claims 22 and 24 are method claim corresponding to the system claims 4 and 6 respectively, and rejected under the same reason in connection to the rejection of claims 4 and 6 respectively above.

7. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenks (US 6,610,106), in view of Kearns et al (US 2004/0104945)

As per claim 10, Jenks discloses, managing calculation expressions, comprising (a) memory means, for storing information about said calculation expressions, (b) processing means, for modifying the content or form of said calculation Expressions, (c) means for receiving external input, and (d) means for showing one or more arboreal graphical representations, wherein (a) an arboreal graphical representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree, (b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression, and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator, wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2, fig.3, fig.7E, col.1 lines 1 – 15, col.3 lines

18 – 43, and col.4 lines 22 – 35) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

Jenks does not specifically disclose means for applying the feature of GROUPING OF PEERS, which is characterized because said system imposes the condition that the operators that link different sister nodes have the same type.

However, Kearns in an analogous art discloses,
means for applying the feature of GROUPING OF PEERS, which is characterized
because said system imposes the condition that the operators that link different
sister nodes have the same type (abstract and para.[0050]) *Kearns teaches grouping of expression into folders.*

Hence, it would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of Kearns into Jenks to include means for applying the feature of GROUPING OF PEERS, which is characterized because said system imposes the condition that the operators that link different sister nodes have the same type. The modification would be obvious because one of ordinary skill in the art would be motivated to provide calculator that display hierarchical view of expression used to calculate a given result.

As per claim 16, Jenks discloses, managing calculation expressions, comprising (a) memory means, for storing information about said calculation expressions, (b) processing means, for modifying the content or form of said calculation

Expressions, (c) means for receiving external input, and (d) means for showing one or more arboreal graphical representations, wherein (a) an arboreal graphical representation is an entity that shows at least two different subexpressions of said expression are assigned to two different nodes of said tree, (b) at least one fragment of said calculation expression is shown in two different nodes of said tree, wherein one of those two different nodes is an ancestor node to the other node, and said ancestor node contains the fragment of the descendent node plus additional fragments of said calculation expression, and (c) at least one node shows only an introduced subexpression, wherein an introduced subexpression is a subexpression which is introduced by an operator, wherein said operator indicates how the content of the node is to be compounded with other nodes in the tree to yield the whole expression or another subexpression of higher order (fig.2, fig.3, fig.7E, col.1 lines 1 – 15, col.3 lines 18 – 43, and col.4 lines 22 – 35) *Jenks teaches node consist of mathematical operators to perform the represented computation.*

Jenks does not specifically disclose means for expanding and collapsing nodes in said arboreal graphical structures.

However, Kearns in an analogous art discloses,
means for expanding and collapsing nodes in said arboreal graphical structures
(claim 16) *Kearns teaches expanding and collapsing of expression hierarchical tree view.*

Hence, it would have been obvious to one of ordinary skill in the art at the time invention was made to incorporate the teaching of Kearns into Jenks to include means

for expanding and collapsing nodes in said arboreal graphical structures. The modification would be obvious because one of ordinary skill in the art would be motivated to provide calculator that display hierarchical view of expression used to calculate a given result.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AUGUSTINE OBISESAN whose telephone number is (571)272-2020. The examiner can normally be reached on 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pierre Vital can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

4/8/2011
/Augustine Obisesan/
Examiner, Art Unit 2156

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